

ABSTRACT OF THE DISCLOSURE

5 A determining method of movement sequence and a positioning apparatus of the invention are arranged in such a manner that, in order to measure positions of plural marks as being measurement targets provided on a wafer within a shorter time, a group including executable movement sequences is generated out of a group of movement sequence candidates, each indicating a measurement order of these marks, and a movement sequence that accomplishes a movement operation between the marks within the shortest time is obtained from the group thus generated.

10 For efficiently searching an optical system as a globally optimal solution within a shorter computation time, independently of an initial solution given, a designing method of optical system of the invention obtains the optimal solution of the optical system to be designed, using an evolutionary computation method (genetic algorithm) having a genetic operator for handling continuous values explicitly. Particularly, from a partial space defined by a predetermined continuous occurrence probability distribution of occurrence probabilities set based on parent individuals, child individuals to be candidates in the next generation population are generated according to the occurrence probabilities.